



SUMMARY FOR DECISION-MAKERS

Number # 13 - November, 2009

Enforcement of water services payment for Mexican water utilities at the Mexico-U.S. Border

Authors: Ismael Aguilar Benitez and Jean-Daniel Saphores

El Colegio de la Frontera Norte and University of California Irvine (UCI)

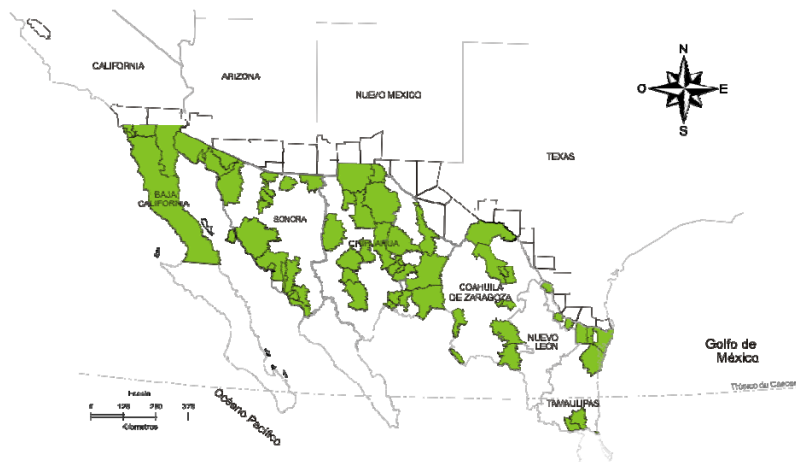


Figure 1. Geographical area covered by water utilities included in this survey

The Mexico-U.S. border region extends 3,300 km from the Gulf of Mexico to the Pacific Ocean. On the Mexican side this region includes six states and more than 200 municipalities with over 16 million inhabitants. The northern border region is characterized by a fast growing population (the average annual population growth rate is 2.4%, whereas the Mexican average is 1.6%) and water scarcity: indeed, only between 1,200 m³ and 1,300 m³ of water per person per year are available. Even worse, according to the Mexican federal water agency (CONAGUA), the amount of water available will dip below 1,000 m³ per person per year in 2030, which implies a situation of water scarcity for human use. At the same time, non-payment for water services is widespread, as approximately 30% of billed water is uncollected each year.

Nonpayment of water services has serious environmental, economic and social consequences. First, it tends to promote inefficient water use since delinquent households have no incentive to conserve water. Second, the inability to

expand municipal water services hurts the poorest people who are not connected to municipal water networks and need to buy their water from private water vendors, typically at much higher prices. Finally, nonpayment compromises the financial self-sufficiency of water utilities by depriving them of much needed financial resources. It is therefore urgent to improve water services management in this region.

This study explores policies to enforce the payment of water services on the Mexican side of the border using cross-sectional billing collection data and water utilities characteristics collected in 2008. We used municipal averages for income and socioeconomic variables. Our main objective was to explore the effect of enforcement policies on the collection efficiency of these water utilities. The main limitation of this study is that available data does not allow us to explain the causes of nonpayment at the household level.

To collect data, we relied on a semi-structured questionnaire. This questionnaire included 40 questions organized in three

sections. The first section focused on general characteristics of each water utility, the second section asked for billing and payment collection data, and the final section concentrated on utilities' policies for dealing with nonpayment and late payment. The questionnaire was sent by mail and fax to 68 Mexican water utilities located within 300 kilometers of the border. We received complete answers from 35 water utilities. The geographical area covered by our survey is shown in Figure 1.

Our relatively small sample size (35 water utilities) precludes econometric analysis. Therefore, the available data are explored descriptively by focusing on the main factors that might explain low collection rates. For our analysis, we relied on graphs, analysis of variance (ANOVA) and Pearson or Spearman correlation coefficients.

Our results suggest that disconnection of residential accounts in arrears could be an effective measure to reduce nonpayment of water services. However a policy of generalized disconnection is unfeasible because it would be costly and users may perceive it as unfair. Alternatively, a policy of widely publicized, selective disconnection (for example focusing on delinquent residential accounts with six or more overdue bills) would be less costly and more effective.

Based on the available data, it is not possible to determine a clear relationship between economic penalties and late payment. It is important to understand that water services are considered an entitlement rather than a service that needs to be paid for. To foster payment, many border water utilities organize payment campaigns but these events, which offer substantial discounts to delinquent households, generate perverse economic incentives for nonpayment. In fact, it is rational for households to withhold payment until the next campaign to pay their bills without any additional charge.

An analysis of water utility characteristics suggests that the size of water utilities is not associated with nonpayment of water services. Small water utilities have the same nonpayment problems as bigger water utilities. This also implies that the lack of urban infrastructure is an unlikely factor for nonpayment. Nevertheless, our results suggest that more payment options may reduce the percentage of residential accounts in arrears, so increasing payment convenience may reduce non-payment. Moreover, our data

suggest that metering might also promote payment. However, the available time to pay does not appear to be a constraint that significantly affects the decision of households to pay for water services.

Surprisingly, a larger disposable billing and collection staff is associated with a higher percentage of residential accounts in arrears. One explanation may be that there are more political jobs in highly politicized utilities where enforcement is lax. This finding suggests that low collection rates are also explained by institutional aspects of water utilities. An analysis of disconnection or suspension of water services confirms this hypothesis; in general, these measures are not applied systematically because of the uncertain legal context. Only in Coahuila, one of the five states included in this study, does the state water law set clear rules for the implementation of disconnection and suspension of water services. As expected Coahuila is also the state with the smallest percentage of residential accounts with overdue bills.

Enforcing payment for water services has several components that are complex to implement. Although some factors such as metering and payment options may be improved, other aspects such as the perverse incentives of payment campaign are more difficult to eliminate. This is unfortunate since enforcing the payment of water services may convey to users that water in this arid region is a very valuable resource that should be preserved and shared with nature.

Ismael Aguilar Benitez holds a Ph. D. in Urban and Regional Planning, with a specialization in Environmental Policy. Jean-Daniel Saphores holds a Ph.D. in Environmental and Natural resources and a Master in Environmental Systems; he is an Associate Professor at the University of California Irvine (UCI).

This work was carried out with the aid of a grant from the Latin American and Caribbean Environmental Economist Program (LACEEP).

Support was also provided from the University of California, Institute for Mexico & the United States (UC MEXUS) and the Consejo Nacional de Ciencia y Tecnología de México (CONACYT).
